

TELEMEDIA

RESPONSE TO

NOTICE 2678 OF 2024

**CONSULTATION ON THE PROPOSED
NEW LICENSING FRAMEWORK FOR
SATELLITE SERVICES**

Executive Summary:

1. Our approach:

- 1.1. Telemedia applauds the Authority for its initiative in addressing the question of Low Earth Orbit (“LEO”) satellite services, the framework required to govern such services and the potential economic benefit to the Republic of South Africa.
- 1.2. It is our view that these bold steps will fundamentally advance the economic and social development needs of the country’s citizens.
- 1.3. Telemedia wishes to assist the Authority in its endeavours by putting forward a pragmatic proposal aimed at reducing unnecessary complexity while still operating within the general framework and licensing processes in the country.
- 1.4. As a leading contributor in this sector, Telemedia, is mindful of the impact any proposed changes will have on the industry and the need to ensure the viability for companies such as ours to remain relevant.
- 1.5. This will require the Authority to balance economic advancement and innovation in the country while safeguarding and promoting growth and investment within the current business environment.
- 1.6. We also acknowledge that we cannot depend solely on the Authority to protect our business interests, and that there is a responsibility on the parties in this sector to innovate and adapt to meet the needs and challenges of the future.
- 1.7. In this regard, we largely concur with the African Telecommunication Union’s (ATU) Strategic Plan 2018-2022 which emphasizes the need for a balanced approach to market entry, competition among access technologies, technical efficiency, and customer protection.

1.8. Harmonizing these technologies in lockstep with South Africa’s neighbouring states would allow for:

1.8.1. *The resources to be used more efficiently across neighboring countries, making satellite services more economical.*

1.8.2. *Telecommunication networks to be built to span multiple countries allowing inter-country communications and other satellite services sharing.*

1.8.3. *Homogeneous foot-prints that can cover entire regions.*

1.8.4. *Reducing the risk of “dead zones” which could prejudice communities that fall within the boundaries thereof.*

1.9. Access to information and communication technologies in rural and remote areas remains particularly challenging due to factors like difficult terrain, isolation and poor support services including roads. Providing terrestrial mobile service in these areas also often results in poor returns on investment due to low population density compared to urban regions.

1.10. Satellite systems offer crucial advantages for expanding broadband coverage, delivering reliable, instant coverage across vast areas regardless of topography. They are resilient to many risks that can affect other networks, such as accidental damage, theft, conflict zones, and natural disasters.

2. **Addressing the Legislative Framework:**

2.1. It is our view that there are sufficient processes and licensing requirements in place for the Authority to advance the use and services of LEO satellites in the country, while still undergoing a review of legislation which requires amendments to the Electronic Communications Act of 2006 (“ECA”).

2.2. Furthermore, we are of the view that within the parameters of common practice used by the Authority, the opportunity of fast-tracking LEO satellite services exists.

This speed to market would have a significant impact on rural areas and access to the digital economy.

2.3. It is also our view that our proposal will sufficiently address the question of Broad-Based Black Economic Empowerment (“BBBEE”) principles in this sector.

2.4. As will be outlined in more detail below our view is that ICASA has the authority to enable a new operating environment by focusing on three key areas:

2.4.1. Licensing

2.4.2. Infrastructure

2.4.3. Services

3. Licensing:

Mindful of the requirement to update various portions of South Africa’s legislation relating to electronic communications in due course, we maintain that the Authority is currently empowered to harmonize discrepancies in terms of how satellite operators are governed in the country. We deal with this in several ways, below.

3.1. Global Operator Requirements

3.1.1. In this regard we would guard against attempting to duplicate the capacity and authority of the International Telecommunications Union and its management of global satellite operations. This is both cumbersome and unnecessary.

3.1.2. For many decades Global Operators have been providing services to South Africa without requiring local licences or BBBEE partners. One such example would be **Intelsat**, which has provided services to MultiChoice’s DStv since its inception in the late 1990s. This has been and – we submit – should continue to be the case. It has caused no problems that we are aware of, nor does it impact negatively on the public interest.

3.1.3. The requirement for all Global Operators to meet specific local regulatory requirements would be nearly impossible to implement and could result in a

lack of investment and a continued connectivity deficit, mostly impacting rural and disadvantaged communities.

3.1.4. This would pose a serious economic and developmental risk to the country, in our view.

3.1.5. ***However, the Authority could still advance the BBBEE interests of South Africa if Global Operators were required to only conduct business with local operators (“Local Operators”) on the basis of:***

(a) The Local Operator has a minimum BBBEE Score of Level 4.

(b) The Local Operator has an IECNS and IECS licence, and any potential new licence as may be determined by the Authority if necessary, to address a different category of services, although we note that the ECA is already technology-neutral regime.

(c) The Local Operator will be required to report on a regular basis to the Authority that its Global Operating partner is not violating any domestic regulations or laws as part of its service.

3.1.6. By insisting that Global Operators only work with Local Operators that meet these requirements the Authority will, in our view, allow for greater access by local companies to international operators to advance affordable, accessible electronic communication services in the country, while also ensuring that local companies share in the economic benefit of this growth.

3.2. Satellite Gateway Earth Station Licence (“SGES”)

3.2.1. It is our view that an IECNS already provides the same privileges as the proposed SGES licence. An IECNS holder only needs to apply for the appropriate radio frequency licence to operate a SGES.

3.2.2. Operation of an SGES should be analogous to operating a mobile network and base stations on the same basis as operating a core network. Put another way, the ECA already includes as an “**electronic communications facility**” an “**international gateway**” and “**earth station**”, as well as any “...other thing which can be used for, or in connection with, electronic communications including where applicable – (i) collocation space; (ii) monitoring equipment; (iii) space on or within poles, ducts, cable trays, manholes, handholds and

conduits; and (iv) associated support systems, subsystems and services ancillary to such electronic communications facilities or otherwise necessary for controlling connectivity of the various electronic communications facilities for proper functionality, control, integration and utilization of such electronic communications facilities”. An “**electronic communications network**” is defined as “a system of electronic communications facilities (excluding subscriber equipment) including without limitation...**satellite systems.**” An SGES is quite obviously an electronic communications facility within an electronic communications network.

3.2.3. This does not require new or different legislation.

3.3. User-Terminals and Devices

3.3.1. Telemedia proposes that the most pragmatic approach to user terminals for the end consumer would be to model this on the basis of a mobile handset or television set-top-box.

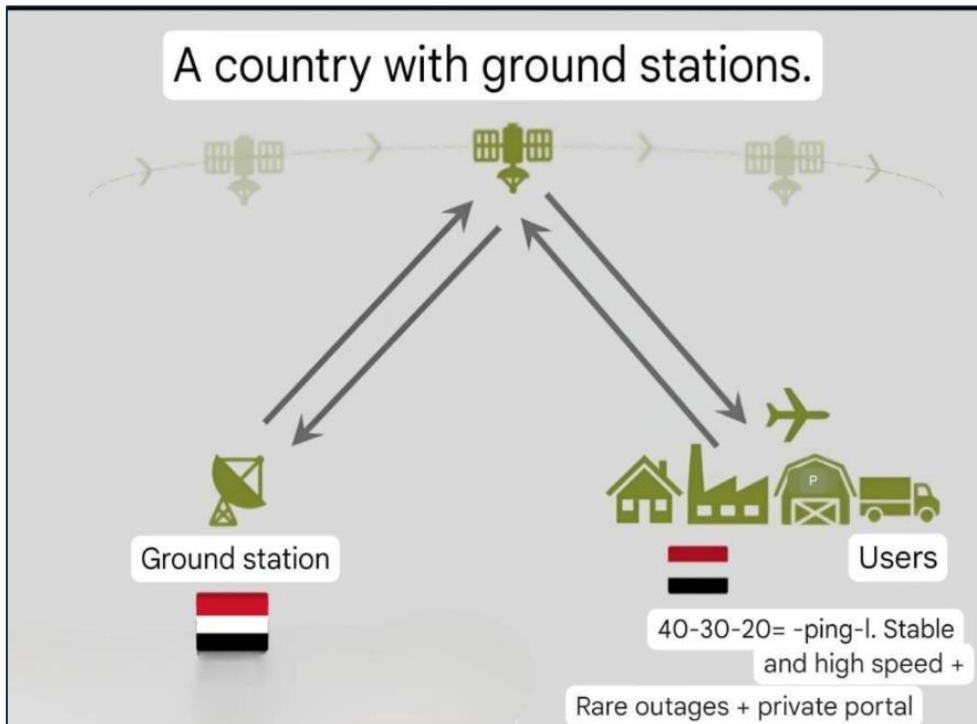
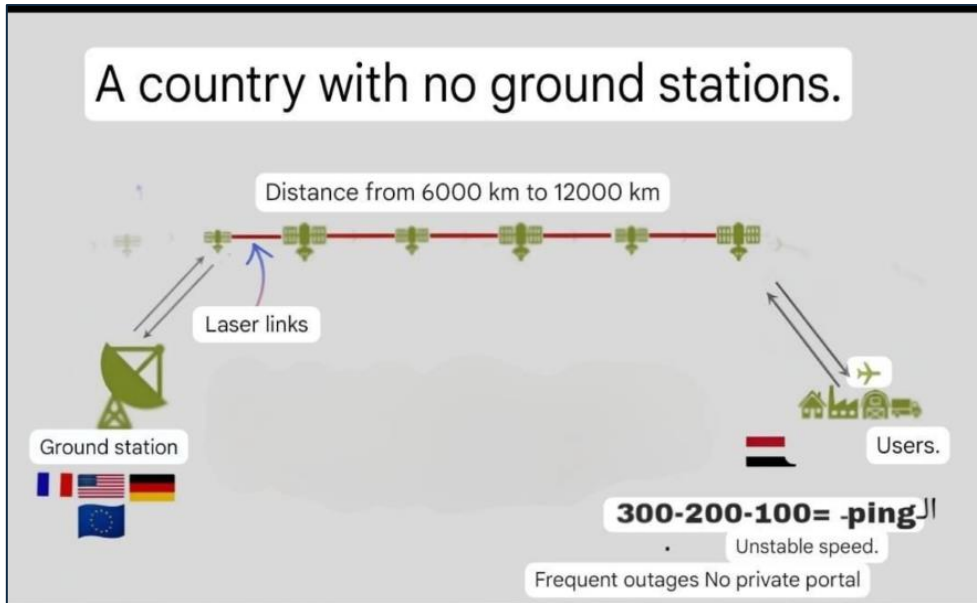
3.3.2. The end user would therefore not require a licence to operate a user-terminal, but rather such equipment would need to be type-approved by ICASA prior to public access.

3.3.3. In addition, the resale/retail of such devices should be managed by Local Operators with the requisite ECNS and ECS licences, alternatively a radio dealer licence which is already provided for in the National Radio Frequency Spectrum Regulations, 2015. They would enter into separate and individual commercial agreements with the Global Operators.

3.3.4. Approved Local Operators could be listed on the ICASA website purely for information.

4. **Infrastructure:**

4.1. LEO satellite services will require the construction of Ground Stations in the country in order to guarantee a reasonable quality of service and reduce latency. This is illustrated in the following diagrams:



- 4.2. By permitting Local Operators (with the required licences and BEE score) to work directly with Global Operators, Local Operators could enter into commercial agreements to build and maintain Ground Stations/Earth Stations on the Global Partners' behalf.

4.3. This would further boost local job opportunities, development of new skills and directly benefit Local Operators.

4.4. In addition, this would create a broad network on which to provide services and achieve digital inclusion.

5. **Services:**

Services available to the South African public and businesses, should this licensing regime be introduced, would include:

(a) **Broadband Internet Access:** High-speed, low-latency internet access via satellite. This service would be available in both urban and remote areas where traditional terrestrial networks may not reach.

(b) **Rural and Remote Internet Service:** this is designed to connect underserved and rural areas where fiber-optic or other terrestrial networks are unavailable or too costly to deploy.

(c) **Mobile Internet:** this includes internet service that works across various locations, allowing users to access the internet while moving, such as in buses, taxis, trucks, boats, or other mobile situations.

(d) **Business and Enterprise Internet Solutions:** this means high-performance internet options for small businesses and large enterprises, ensuring connectivity for critical operations even in hard-to-reach locations.

(e) **Maritime:** Satellite internet can be designed specifically for boats and maritime operations, providing internet access in open water and remote maritime locations, which may prove to be useful along South Africa's extensive coastline.

- (f) **Aviation:** A specialised service to provide in-flight internet connectivity for aircraft can be made available, ensuring continuous internet access during flights with onboard Wi-Fi.

Telemedia remains committed to collaborating with the Authority to support the development of this essential sector, ensuring that both economic growth and technological advancement are achieved while safeguarding the local business environment. In the balance of this document we set out our response to the questions posed by ICASA.

1. Introduction

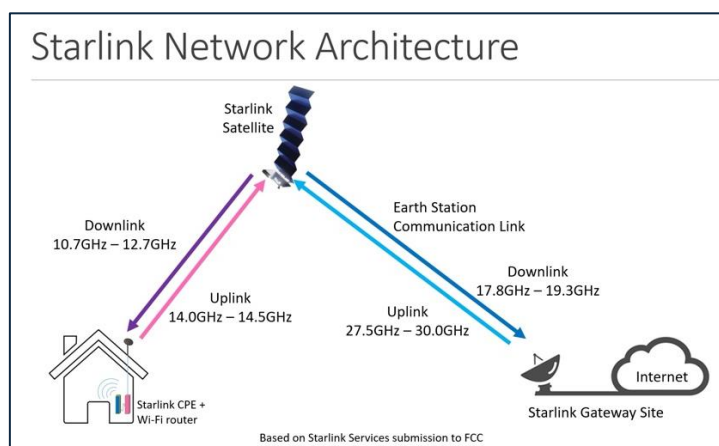
- 1.1. Telemedia has reviewed the consultation document as published by the Authority in Notice 2678 of 2024 Consultation on The Proposed New Licensing Framework for Satellite Services (“the Consultation Document”)
- 1.2. Telemedia appreciates the opportunity to be able to comment on this Consultation document. Telemedia also welcomes the opportunity to further augment its written submission with oral presentations should the Authority hold such oral hearings on the Consultation Document.
- 1.3. Telemedia’s response to the Consultation Document first addresses broader issues of principle and context related to the Consultation Document and thereafter we address the various questions raised by the Authority therein.
- 1.4. Telemedia respectfully submits that the use of satellite technology to provide broadband services to end users (directly to consumers or to enterprise and government clients) is not a new development and has been in operation for decades, and these services are still in use across the globe. For example, VSATs (Very Small Aperture Terminals) utilise Geostationary Satellites to provide data communication between a ground station hub and remote terminals.
- 1.5. Similarly, the use of Low Earth Orbit Satellites (“LEOs”) for communication services have been used by telephony systems like Iridium and Thuraya for decades and are still used for specific applications particularly in remote areas or during times where traditional mobile cellular networks are not available such as during times of natural disaster. Specialised user groups such as disaster management services and military operations continue to make use of LEO-based satellite telephony.
- 1.6. Essentially satellite-based non-geostationary and geostationary communications networks used for voice and data services have two broad elements that may be the

subject of regulation. These are the required Ground Station Infrastructure and the End User Terminals or customer premise equipment.

1.7. The Ground Stations are effectively the “termination” end point in the broadband network which manages all the services on the satellite network, enables the end user devices or CPE equipment and ensures that the constellation of satellites are operating correctly.

1.8. Strictly speaking the geographical location of the Ground Station has more of a service and user experience impact than the other parts of a satellite system. Where a Ground Station, commonly referred to as a Gateway, is located within a particular geographical location it enables certain services and enhances user experience. In other words, if the Gateway for a LEO-based satellite service is located in South Africa, it enables local breakout into the Internet and very importantly, allows for direct connection to local networks.

1.9. Using a Starlink Architecture diagram (which is publicly available) as an illustrative example, this issue is shown below.



1.10. In the figure above, it can be seen that the user terminals will connect via the constellation of satellites, to a Ground Station or Gateway. The Gateway is then

connected to the Internet, which is how the end user is connected to the Internet.

- 1.11. In circumstances where the Gateway is located in a different country, the end user will still have access to the Internet, except that the connection to the Internet will originate from a different country to that where the end user is situated.
- 1.12. Where the Gateway is located in a different country, the user will not be able to establish or configure private networks or local internet break-out, which may affect cost and performance.
- 1.13. In circumstances where the Gateway site is located in the same country, users can establish private networks and cater for local internet break out which may have an improved cost and performance experience.
- 1.14. Telemedia submits that while there is substantial focus on brands such as Starlink, there are other LEO satellite broadband solutions that are in use today. One such example would be OneWeb and Amazon Kuiper.
- 1.15. Both Starlink and OneWeb have similar architectures in that they both make use of a constellation of Low Earth Orbit Satellites, they both utilise Gateway Ground Stations to connect users to private networks and the Internet, and they both have relatively lower cost end user terminals or CPEs.
- 1.16. Telemedia's view, is that the licensing of these services is not a new technology or service that needs to be addressed by the Authority.
- 1.17. Historically all of these systems (Iridium and general VSAT solutions) have been deployed in South Africa, either with a local gateway operator or without a local gateway operator.

- 1.18. In some instances, the Satellite system owner, might enter into a commercial relationship with a local licensed operator to establish and operate the required local gateway in South Africa.
- 1.19. Telemedia therefore questions the need for the Authority to create a separate licensing regime for what seems to be perceived as a new advancement in technology and services, while it is in fact simply a different technology, bearing in mind that the ECA creates a technology-neutral regulatory environment.
- 1.20. What has changed dramatically over the years is that the new LEO-based solutions from operators such as OneWeb and Starlink, are:
- 1.20.1. of substantial GLOBAL scale, largely based on the significant investment by the owners. Starlink for example have a constellation of 6,426 satellites in orbit;
 - 1.20.2. offering significantly improved latency of the services. Typically, LEO services operate with latencies between 20 and 40 ms compared to 600ms with GEO satellites;
 - 1.20.3. capable of providing much higher data speeds to end users when compared to legacy GEO VSAT systems;
 - 1.20.4. improving end user device cost drastically;
 - 1.20.5. offering future enhanced services like direct to handset, where Mobile handsets may soon be able to use the same constellation of LEO satellites for voice and data services; and
 - 1.20.6. accessible to the majority of the population.
- 1.21. Telemedia submits that the recent emergence of more advanced satellite-based broadband services is nonetheless catered for within the current licensing framework.
- 1.22. Telemedia submits that the issue that the Authority is actually seized with is whether an international operator, who owns and operates a global broadband satellite network, requires a licence to provide services in South Africa within the current licensing framework of the ECA.

- 1.23. Telemedia submits that in addressing the issue of whether or not an International Operator can offer satellite-based broadband services in South Africa, it may be helpful to the Authority to separate the Infrastructure from the Service in its deliberations. A similar approach has been taken by OFCOM in the United Kingdom.
- 1.24. By separating the Infrastructure from the Service, the Authority can quite easily address this issue as follows:
- 1.24.1. The ECA defines Electronic Communications Services as *“any service provided to the public, sections of the public, the State, or the subscribers to such service, which consists wholly or mainly of the conveyance by any means of electronic communications over an electronic communications network, but excludes broadcasting services”*.
- 1.24.2. Any company that wishes to provide satellite-based broadband service (for operators such as Starlink and/or OneWeb and/or other similar operators), simply requires an Individual Electronic Communication Service licence.
- 1.25. Although it is a requirement of the ECA that a person that applies for spectrum must hold a licence, the wording of section 31(2)(a) and (b) makes it clear that this could be any service licence contemplated in Chapter 3. Chapter 3 and particularly sections 5(3)(e) and 5(5)(c) authorise ICASA to create service categories other than ECNS and ECS. Therefore, the holder of any type of service licence including a satellite service licence (in whatever form that may take) ought to be permitted to apply for and be assigned spectrum from the national plan.
- 1.26. Satellite operators that operate at the wholesale level do not have access to consumer personal information, thus there should be no concerns in this regard.

- 1.27. Telemedia submits that the provision of a satellite based broadband service is already catered for in the current legislative framework and therefore there is no basis on which the Authority can preclude Individual ECS licensees from providing services using platforms such as Starlink or OneWeb to consumers of such a service.
- 1.28. When considering the Infrastructure portion of the service, meaning the Earth Station Gateway (“SGES”), Telemedia submits that there are existing options that could be considered by the Authority:
- 1.28.1. Section 6(1) of the ECA empowers the Authority to prescribe the type of electronic communications network services that may be provided without a licence, subject to section 6(2) which states, in section 6 (2) (f) *“such other services considered to be exempted, as may be prescribed by the Authority”*. Section 6(3) states that *“Any regulations prescribed by the Authority in terms of this section may contain terms and conditions applicable to the exempted electronic communication services, electronic communications networks, electronic communications services and Radio frequency spectrum use and declare contravention of the regulation of an offence, subject to Section 17H of the ICASA Act”*. Telemedia respectfully submits that the Authority need not introduce new categories of licences as contemplated in the Consultation document, as the ECA already has provisions in Sections 6 (1), (2) and (3) that empower the Authority to exempt Non-Geostationary Satellite Services such as OneWeb and Starlink from licensing.
- 1.28.2. Alternatively, the Authority ought to consider the option in terms of which international operators may enter into commercial agreements with existing Individual Electronic Communication Network Service (IECNS) licensees for the establishment of such facilities. These could be resale, lease or even build and operate agency type agreements. However, and importantly, the Authority should not over-reach in its mandate by attempting to regulate commercial

relationships between Satellite Operators and Terrestrial network providers (as set out in section 2(y) of the ECA)¹.

1.29. In both instances, there are existing provisions within the ECA that will enable the Authority to allow International Operators to provide satellite-based broadband services irrespective of whether or not these are using geostationary (“GEO”), medium earth orbiting (“MEO”) or LEO satellite technology.

1.30. Telemedia submits that to the extent that the Authority is of the view that a separate licence is in fact required at all for the provision of satellite-based broadband services, Telemedia strongly urges the Authority to also separate the licensing of Earth Station Gateways and End User Terminals or CPE devices.

1.30.1. This approach has been adopted by OFCOM in the UK², and could easily be replicated in South Africa with some minor changes. In summary, the OFCOM approach has been to issue a new category of licence called a Non-Geostationary Satellite Earth Station Licence, commonly referred to as a Gateway Licence. Gateway licensees are authorised to only establish and operate a satellite gateway. This gateway is then connected to a local internet exchange or local peering point to enable faster speeds, better user experience and to establish private networks.

1.30.2. An End User Licence or what OFCOM calls an Earth Station Network licence allows the use of user terminals and this licence must be held by any operator wishing to deliver services in the country.

1.31. In essence, what OFCOM have done is to separate the infrastructure layer from the services layer in their approach to the licensing of Non-Geostationary

¹ This section is included as one of the Objects of the ECA which provides that regulation of electronic communications should take place in the public interest and for that purpose, to refrain from undue interference in the commercial activities of licensees while taking into account the electronic communications needs of the public.

² [Apply for a satellite earth station licence - Ofcom](#) and [Space and satellites - Ofcom](#). Accessed on 8 November 2024.

Satellite services such as Starlink and OneWeb. The same model can be applied in South Africa save that the Authority might create a new licence category for the Gateway or Infrastructure element of the overall service. The Authority could then utilise the provisions of Section 6 of the ECA which empowers the Authority to determine in what circumstances such an electronic communications facility might be provided in South Africa with a licence exemption.

- 1.32. Therefore, it is our submission that a licensing framework for LEO satellite services already exists and so creating a new category of licence is not required and could potentially delay the speed to market would have a significant impact on rural areas and access to the digital economy.

- 1.33. OFCOM have adopted a very simple costing model for each of the two licence types:
 - 1.33.1. Gateway licences have a flat fee of £500 per annum per gateway (approximately ZAR10,000);
 - 1.33.2. End user Subscriber licences or CPE licences paid for by the licensees covers an unlimited number of terminals and costs £200 per annum (approximately ZAR4,000). This enables multiple end user terminals to be provided by an operator without having to go through cumbersome regulatory procedures for licensing and paying for each one.

- 1.34. While we agree it is sensible to require international operators to register with ICASA in the interests of transparency, because they obtain space segment at an international level and this is already coordinated across all satellite operators and internationally (in relation to spectrum), we do not consider it necessary to license or otherwise authorise international providers outside of ICASA's jurisdiction. We support the "Open Skies" approach discussed by ICASA.

- 1.35. In addition to the above, the coordination of spectrum, spectrum usage and licensing is processed, efficiently, by the International Telecommunications

Union (ITU). South Africa is a signatory to the ITU and participates in all the ITU World Radio Conventions (WRC) which coordinate all spectrum allocations for all wireless services with consideration for international harmonization, prevention of interference, and spectrum management. Decisions taken at the ITU WRC are accepted by South Africa.

2. Addressing Specific Questions in the Consultation Document

Telemedia will now address the specific questions that were posed in the Consultation Document.

2.1. QUESTION 1

These are the policy principles from the ATU that ICASA seeks to align with:

“This document (ATU Framework) recommends the following policy principles from ATU Member States in the development of national satellite licensing frameworks:

- a) Licensing process to be harmonised, as much as possible, among the ATU Member States.*
- b) Licensing of satellite networks or services provision to follow the ITU instruments and regulatory procedures that govern the use of radio spectrum and associated orbital resources.*
- c) Transparent regulatory frameworks with clear rules to establish regulatory certainty to support durable investment.*
- d) Domestic user terminals to be licensed without the need for individual terminal-by-terminal authorization (e.g., on a blanket licensing basis).*
- e) Member States to take appropriate actions to publish in a timely manner, procedures for authorising user terminals operations in their countries*
- f) Designation of the relevant frequencies for use by satellite user terminals on a domestic, regional, or international basis consistent with Radio Regulations frequency allocation Table; and*
- g) Reasonable spectrum fees, taking also into account the increasing amount of bandwidth used by satellite systems operating in higher frequency bands.”*

Kindly provide comment(s) on the proposed policy principles and any further recommendations listed in the above section?

- 2.1.1. Telemedia submits that it is generally supportive of the principles stated above. In relation to principle (a) which states, *“Licensing process to be harmonised, as much as possible, among the ATU Member States”*, Telemedia strongly

supports this principle as it enables greater inclusion among member states and cross-border coordination.

- 2.1.2. Members of the ATU have long since authorised the sale and use of satellite-based broadband services such as Starlink. By harmonizing licensing processes, the Authority could similarly enable the provision of these services in order to improve access to broadband services in rural areas or areas where terrestrial connectivity solutions are simply not economically viable.
- 2.1.3. Satellite systems offer significant advantages for expanding broadband coverage: they provide instant-on coverage across wide geographies without regard to challenging topography; they are reliable and largely immune to many risks that other networks face, including accidental damage, theft, conflict areas and natural disasters.
- 2.1.4. It makes sense that members of the ATU and especially countries with shared borders have harmonized or similar policies for satellite and satellite frequency use. To have conflicting policies would limit the potential of a satellite facility when the facilities cover more than one country. Misaligned policies could warrant the use of frequency exclusion zones to be put in place to guard against interference from a neighboring country with alternative policies. These exclusions zones could be up to 100km wide making a dead-zone for Satellite communications along the borders of countries. Harmonized policies allow for:
 - (a) reducing RF exclusion zones to zero;
 - (b) using the resources of the satellite more efficiently across neighboring countries, making satellite services more economical;
 - (c) building telecommunication networks to span multiple countries allowing inter-country communications and sharing other satellite services; and
 - (d) homogeneous foot prints that can cover entire regions.

- 2.1.5. In relation to principle (b) of the policy framework, Telemedia strongly supports the notion that the licensing of satellite networks and service provision should follow the ITU instruments and regulatory procedures. This is especially relevant when one considers that most LEO satellite-based broadband networks comprised several thousand satellites that constitute the total constellation of LEO satellites.
- 2.1.6. It is Telemedia's contention that any attempt by regional or local regulatory Authorities to establish a separate coordination function would not only place an undue administrative burden on these Authorities, but it may result in a situation where ATU member states inadvertently create contradictory coordination guidelines to that of the ITU. This will not only create further administrative workload, but will create a risk of ATU member states being isolated from global services.
- 2.1.7. As far as principle (c) is concerned, this would seem to an important, almost expected principle that all regulatory Authorities ought to strive for. It is common cause that clear rules and a transparent framework are critical for the efficient operation of the entire industry. Telemedia submits that clear and transparent regulatory frameworks are the cornerstone of enabling significant economic growth and development in any nation. Clear frameworks and rules provide investor certainty, whether that be foreign or local investment. The clarity of rules and transparent frameworks are a significant consideration when investors make investment decisions.
- 2.1.8. Furthermore, it is generally accepted that communications infrastructure whether satellite, mobile cellular or fibre are typically capital-intensive businesses and require sustained capital investment to be sustainable, which in turn drive inclusion, economic growth and create service industries all of which leads to better lives for all citizens. When examining the success of mobile cellular penetration in any country, one of the key drivers is the sustained capital investment by the network operators. In South Africa, it is not

uncommon to find that Vodacom and MTN would typically invest circa R 20 billion into their networks every year. This in turn improves coverage, lowers cost to the consumers and drives service adoption. All of this is unlikely to take place where there is an unclear regulatory framework and vague rules or where rules are not applied equally to all operators in any market.

2.1.9. In relation to ATU principle (d), Telemedia strongly supports a blanket licensing approach for user terminals. It is critical to ensure that consumers and service providers are not overly burdened with additional costs in order to drive service uptake and adoption. Licensing satellite terminals on a per terminal basis will create a substantial barrier to entry for any service provider or satellite network operator. Additional regulatory and administrative costs whether for licensing or actual terminals will no doubt create an unnecessary barrier to entry which could harm the adoption of these type of services. In much the same way that there are no per terminal licensing fees for cellular handsets, so too, there should be a zero cost to the end user when acquiring an end user terminal.

2.1.10. In this regard, the Authority is encouraged to consider the approach taken by OFCOM in which end user terminals are (i) type-approved; and (ii) have blanket licences. Moreover, service providers pay a minimum of £200 to be authorized to operate on an unlimited number of end user terminals. This model will very strongly encourage the uptake of the services in a given market as well as encourage more service providers to enter the market not as infrastructure providers but as service providers. This in turn will result in more competition which ultimately leads to better service levels and reduced pricing over time.

2.1.11. As stated above, the same principle set out in (e) would be applicable for the authorisation of user terminals. In this instance, type approval would more than suffice for these end user terminals. In addition, Telemedia proposes that in instances where approval is given in one ATU member country it should be

adopted in other member countries. The test requirements for type-approval must be the same across ATU member states.

2.1.12. As regards principle (f), Telemedia submits that in addressing the issues of frequencies and frequency bands, particularly for global satellite networks, these assignments are coordinated and finalised by the ITU through the World Radio Conference. There is little value in ATU member states attempting to rework or change these decisions in their individual radio regulations as this will cause unnecessary administrative burdens on all regulatory Authorities. In addition, the consequences of not aligning with ITU WRC allocations will be that ATU member states will be isolated from global networks as it is unlikely that global operators will manufacture equipment in bespoke frequency bands.

2.1.13. One of the reasons that global systems like GSM for Cellular and in the current case LEO satellite systems are able to reduce the cost of terminals to end users is the standardisation of frequency bands and allocations. These standards enable economies of scale at a manufacturing level and this is translated as reduced costs to the end users. Where a region or country falls out of the standardised bands, the consequences typically result on higher end user pricing for terminals because there are fewer manufacturers willing to produce equipment in those non standardised bands. This results in less availability of in the supply chain, which will cause an increase in pricing. The lessons from the rapid adoption of GSM handsets lies partly in the standardisation of systems, and frequency bands globally. This lesson would be well heeded in this instance. Telemedia would strongly encourage the Authority to align frequency bands and allocations with the decisions reached at the ITU and relevant WRC sessions.

2.1.14. Telemedia strongly supports the principle of moderate, if not minimal spectrum fees (principle (h)). In order to drive the penetration of broadband across large geographical areas, particular in areas that are hard to reach with mobile cellular or fibre, or to areas that are not economical for alternative

connectivity solutions, it is imperative that the Authority ensure that spectrum fees are kept to an absolute minimum so that overall costs to provide service are kept as low as possible and savings can be passed on to the consumer.

2.1.15. We note that spectrum allocated and assigned for satellite use, particularly newer generation broadband services like OneWeb and Starlink, is coordinated at a global level. This is unlike mobile cellular spectrum which is ultra-high demand spectrum and is managed, coordinated, and assigned at a country level. The use of such spectrum for high demand cellular has competing requirements in each country which satellite spectrum generally does not. As such, the Authority is cautioned against introducing unjustifiable or unaffordable cost barriers to the provision of satellite broadband services.

2.1.16. Telemedia would strongly encourage the Authority to consider adopting the model that OFCOM has adopted where Gateway licences are a flat rate of £500 and Service Licences are for an unlimited number of end user terminals is a flat rate of £200 annually.

2.2. QUESTION 2

Do you agree with the exclusions of radio navigation satellite services, amateur satellite services, earth exploration, space research satellite services and radio astronomy services indicated above and others if applicable? If not, please explain your reasoning and propose an alternative to this proposal.

2.2.1. Telemedia agrees with the concept that a provision should be included in the licensing framework to allow for excluding subsets of satellite services on the proviso that the service is limited to defined RF emissions.

2.2.2. Licensing of GPS devices will add an unnecessary burden to the Authority's portfolio. A provision to allow GPSs navigational systems to continue providing

vital navigational services to the population of South Africa is important without additional costs and bureaucracy being necessary.

- 2.2.3. Earth Exploration and Earth Observation Services for mining exploration, farming and weather systems need spectrum clear of interference. These services should be exempt from licensing and the costs associated with licensing, provided that the RF emission from these services are kept within allocated specifications.

2.3. QUESTION 3

Do you agree with the proposed approach of having a separate licence/authorisation (where applicable) for each segment of the Satellite Communication value chain? Please elaborate.

- 2.3.1. Telemedia agrees with the separation of licences as stated earlier in this submission. It is imperative that the Authority create at least two segments of the value chain separately from one another. We suggest it be structured like this:
- 1) The Gateway or the Infrastructure Authorisation or Exemption;
 - 2) The Service Provision licence; and
 - 3) Frequency licences.
- 2.3.2. As we stated earlier, Telemedia proposes that the Authority create an authorisation or exemption process for the Gateway licence OR authorises existing Individual ECNS licensees may enter into arm's length commercial agreements with Global Operators such as Starlink and OneWeb but this is only required if the operator wants to establish a Gateway in South Africa.
- 2.3.3. Separately, the Authority can rely on the existing local Individual ECS licence where a licensee wishes to offer such services to end users within the country, irrespective of the location of the Gateway.

- 2.3.4. Telemedia submits that Space Segment is largely managed by the satellite operators and assigned and coordinated by the ITU. Satellite service operators are not likely to interfere with each other because they will only operate in the bandwidth allocated by the satellite provider. The frequencies offered by the satellite operators to the satellite service providers is bound by the ITU allocations. For this reason, Telemedia submits that it is not necessary for the Authority to regulate the frequencies used for space segment in any manner including registration.

2.4. QUESTION 4

Please provide your comments on the proposals in the preceding paragraph and the duration of the Gateway Earth Station licences which states, "DOTECON in its report² on "Satellite Earth Station Review for Ireland", states that, "Among regulating authorities, there appears to be some trans-national competition in hosting ground stations, with some jurisdictions being particularly flexible when it comes to Satellite Earth Station licensing or even offering tax benefits and other incentives to attract satellite operators. Longer radio spectrum licence terms and renewal options provide important certainty and predictability to market entrants that can help justify the significant upfront and operational expenses necessary to deploy earth stations that can support connectivity for consumers and businesses. This creates an additional incentive for Global Ground Station operators to choose South Africa as the host of the Gateway Earth Station. The Authority recommends the Gateway Earth Station licence shall be valid for five years from the effective date of the licence with a provision of renewal for a further five (5) years at each instance of renewal".

- 2.4.1. Telemedia submits that the comments are true and require careful consideration by the Authority. As stated in the paragraph, the capital investment in Ground Stations, both establishment and ongoing operational investment, is substantial. In order for Global Satellite operators to choose South Africa as a destination for the deployment of such Ground Stations, they will require comfort as it relates to the period within which they are able to recover their investments and realise their required return on investment.

- 2.4.2. Telemedia submits that 5 years is not a sufficient period of time to recoup the scale of investments that would be made by Global Operators, especially if the Authority intends to levy additional fees that could temper service uptake and penetration such as unnecessary spectrum fees, or fees on a “per end user terminal basis”. Telemedia submits that the Authority needs to consider the licence duration as integrally linked to all the fees that the Authority intends to implement for these type of services.
- 2.4.3. In simple terms, if the Authority levies spectrum usage fees on a per terminal basis or block of terminals, and it also levies additional ground station spectrum fees, then in such instances the duration of the ground station must be in the order of 15 to 20 years. Individual ECNS licences are valid for 20 years. The lifespan of a LEO satellite (5-7 years) ought not to impact on the this as the ground station can operate for a longer period than the satellite.
- 2.4.4. It is imperative in our view that the Authority be mindful of the barriers to uptake when considering licence duration in relation to satellites, as these businesses are only viable if there are little to no regulatory barriers to driving revenue through increased uptake by consumers. Limited time to recoup investments would be such a barrier.

2.5. QUESTION 5

Please comment on the above-mentioned alternative proposals to levy the spectrum fees for Gateway Earth Stations and indicate your preferred option. The Authority understands that there are other spectrum fee calculation methodologies used elsewhere in the world. Please give details of the methodologies which you believe would be most suitable for South Africa.

- 2.5.1. As stated previously, Telemedia submits that the Authority ought to adopt an investor-friendly approach to these matters. Primarily, the separation of Infrastructure from Services is critical for these services to be successful and

drive wider adoption of broadband in South Africa. To simply adopt legacy methodologies to levy fees is somewhat inappropriate and will only serve to stifle and retard growth in the provision of satellite based broadband solutions in the country.

- 2.5.2. It is our submission that there should fixed annual fees for both Gateway Licenses and End User Licences. The End User Licences should be based on an unlimited number of end user terminals. In the same way that the Authority is not levying fees on mobile cellular handsets or modems, the same principle ought to be applied to satellite based broadband services.

2.6. QUESTION 6

Kindly comment on the section above and on the proposal for blanket licensing with a fee for a set number of terminals under a new proposed licence regime to be referred to as "Satellite User Station Network Licence." If possible, please provide a breakdown of the number of terminals with the corresponding spectrum fee values in South African Rands.

- 2.6.1. Telemedia supports the principle that separates the licensing or authorization of Ground Station Gateways and User Terminals, from the provision of services. As stated previously in this response, Telemedia submits that the Authority should authorise holders of IECS licences to sell end user terminals from any Non-Geostationary Satellite service provider into South Africa.
- 2.6.2. When determining pricing for End User Terminals whether this be under a new regime or utilizing the existing licensing framework, the Authority needs to be mindful of several key factors:
- (a) **Service uptake:** In order to promote and encourage the uptake of the End User Terminals it is important to ensure that the cost of these terminals and associated services are kept as low as possible. This will enable greater penetration of the service to end users, increase competition, and very importantly contribute to the bridging of the digital divide.

(b) **Licence Durations:** As stated previously, Telemedia submits that in order for Global Network Operators, such as OneWeb and Starlink, to invest in South Africa, the return on investment for capital-intensive investments needs to be assured. The higher the costs of gateway infrastructure, spectrum costs, licensing fees and local operating costs, the less viable such an undertaking becomes.

2.6.3. Creating additional administrative overhead places an additional burden on the Authority. Telemedia submits that there should be a blanket flat rate licensing approach for End User Terminals, but that there should be a flat rate fee payable by the authorized IECS licensee for an unlimited number of end user terminals. The blanket fee should be payable annually and has no relationship to the number of end user terminals deployed into the market so as to drive adoption (particularly in rural and underserved areas) and keep end user pricing as low as possible.

2.6.4. This approach addressed the key factors listed above, in that it will reduce the fees of the service to the end user, reduce administrative overhead for the Authority and very importantly create an investor friendly regime for network operators like Starlink and OneWeb. This will also enable more rapid adoption of the service, creating greater penetration and availability of high-speed broadband services in the country and ultimately work towards bridging the digital divide. Ultimately lower administrative and regulatory fees create great viability for service deployment and adoption.

2.6.5. As far as the issue of recognition of licences issued by other countries is concerned, Telemedia strongly supports the principle that the Authority ought to give full recognition to End User Terminals that have been approved by other Authorities in other countries. This is particularly relevant in the case of satellite End User Terminals because such systems would typically conform to

internationally accepted standards and would be aligned to specifications determined between global operators.

2.7. QUESTION 7

Kindly comment on the appropriateness of using regulation 37 of the ICASA radio regulations (“Recognition of licences issued by other countries”) to recognize ESIM licences issued by other countries)

Telemedia supports the principle above. We agree that ESIMs should be licence-exempt if they are issued by a country recognised for this purpose by ICASA.

2.8. QUESTION 8

Please provide your comments and details of the best practices in other jurisdictions to fulfill the intentions of the Authority as indicated in the above section. Furthermore, considering the provision set out in the Astronomy Geographic Advantage (AGA) Act of 2007, and the requirements of the Radio Quiet Zone, what measures and techniques do you propose to be employed in mitigating the possible interference that may be caused by the satellites within the Astronomy radio frequency bands in South Africa?

- 2.8.1. Telemedia has reviewed the approach that OFCOM has taken with regard to the licensing of Non-Geostationary Satellite services and would strongly encourage the Authority to consider this approach.
- 2.8.2. In summary, OFCOM have separated the Infrastructure Provision from Service Provision. This has enabled the creation of a new licence category for the Gateway portion of the network and a separate licence of the End User Terminals. At the same time OFCOM have taken a pro investment and growth approach to enabling satellite broadband services in the United Kingdom by ensuring that there are no artificial regulatory barriers to the provision of services, in that they have implemented very affordable fees for both the

Gateway licence and the End User Licence. It is vital to take note that the end user licence fee is based on an unlimited number of end user devices/terminals.

- 2.8.3. Telemedia submits that this approach is rational and pragmatic, and will strongly encourage the uptake and penetration of the services, all of which when viewed collectively creates an environment to fast track access to high speed broadband across the country. Telemedia encourages the Authority to consider this approach and focus on ensuring a more supportive approach to the licensing of these services in South Africa.

2.9. QUESTION 9

Please provide proposals on the role the Satellite operators can play in ensuring that broadband connectivity reaches the areas of the country in terms of community networks with Satellite connectivity as a backhaul. Kindly provide a regulatory solution that can be applied by Satellite operators to address the shortcomings of terrestrial networks in providing to unserved and underserved areas of the country. This may include collaboration with government programs to reach out to those unserved and underserved areas of the country.

- 2.9.1. Telemedia submits that satellite capacity including backhaul is a vital wholesale input. We do not consider it necessary for a wholesale provider to have to hold an ECNS licence in order to provide capacity at the wholesale level. However, they should provide capacity only to licensed ECNS providers in South Africa. Backhaul and capacity will enable cost-effective rollout in hard-to-reach areas, and provision by satellite should be encouraged.
- 2.9.2. Further to this, as stated repeatedly in this document, it is imperative that the Authority create an investment and service friendly regulatory regime. This is achieved by ensuring that:
- (a) The regulatory policies and rules are clear and applied consistently;

- (b) The separation of infrastructure and services for licensing purposes is maintained;
- (c) Allowing for the establishment of gateway infrastructure makes South Africa an attractive destination for much needed foreign investment; and
- (d) Ensuring that the fees for end user terminals is based on an “unlimited” annual low-cost fee will positively impact service adoption, these two factors combined will address the shortcomings of terrestrial networks to underserved or underserviced areas.